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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,780	08/28/2003	Junichi Kitano	241917US-2DIV	5844
22850	7590	02/24/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			MOORE, KARLA A	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 02/24/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/649,780

Applicant(s)

KITANO ET AL.

Examiner

Karla Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-62 is/are pending in the application.
- 4a) Of the above claim(s) 21-34, 43-52 and 62 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-41 and 53-61 is/are rejected.
- 7) ☒ Claim(s) 42 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of claims 35-42 and 53-61 in the reply filed on 22 November 2005 is acknowledged. The traversal is on the ground(s) that there is no serious burden in searching and examining the entire application. This is not found persuasive because while there may be some overlap between the three distinct inventions, there is also a substantial amount of material that is unique to each. Examining all of the inventions together would require an additional, significant amount of time that would not be necessary for examining a single one of the inventions.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 37 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claim 37 recites the limitation "the reaction inhibiting section". There is insufficient antecedent basis for this limitation in the claim. As presently amended, in the claim from which claim 37 depends (claim 36), the limitation of a reaction inhibiting section has been deleted. Examiner has examined the claim assuming that Applicant meant to refer to "the cooling section" which is disclosed as being capable of reaction inhibition in claim 36. Clarification and/or correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 35-39, 41, 53, 56-57 and 61 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,022,672 to Ikeda.

7. Ikeda discloses a substrate processing apparatus in Figure 8, comprising: a reaction inhibiting section (multiple numbers, 155-157; column 1, rows 30-52 and column 6, rows 1-17) for performing processing of inhibiting progress of a resolution reaction of a resist for a substrate coated with the resist and exposed; a heating section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for heating the substrate processed in the reaction inhibiting section to progress the resolution reaction of the resist; a cooling section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for cooling the substrate heated in the heating section to inhibit the progress of the resolution reaction of the resist; and a developing processing section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for performing coating processing of a developing solution for the substrate cooled in the cooling section (claim 35).

8. With respect to claim 36, Ikeda also discloses a substrate processing apparatus in Figure 8, comprising: a first station (151) including a mounting section on which a substrate cassette housing a plurality of substrate is mounted and a delivery means (153) for receiving and sending the substrate from/to the substrate cassette mounted on the mounting section; and a second station (multiple part numbers 154-158 and 162-163) connected to the first station, for processing the substrate transferred by the delivery means and for delivering the substrate between the processing station and an aligner (159) for subjecting the substrate to exposure processing; wherein the second station includes; a cooling section (163) for cooling the substrate heated in the heating section to inhibit the progress of the resolution reaction of the resist, and a developing processing section (any of 162, which are

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general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for performing coating processing of a developing solution for the substrate.

9. With respect to claim 37, a "cooling section" is placed near the aligner (see Figure 8).

10. With respect to claims 38 and 39, using the heating and cooling sections (155 and 163) of the reaction inhibiting section, the section may inhibit the progress of the resolution reaction of the resist by heating and/ or cooling the substrate coated with the resist and exposed so as not to cause dew formation.

11. With respect to claim 41, which recites that the resist is a chemically amplified resist, the resolution of which is progressed by an acid produced by exposure, Examiner notes that the courts have ruled that that the inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims. In re Young, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)). Examiner also notes that Ikeda teaches that the resist is a chemically amplified resist, the resolution of which is progressed by an acid produced by exposure (column 5, rows 13-18).

12. With respect to claims 53 and 61, the substrate is exposed in an exposure section (159) for exposing the substrate coated with the resist; and the reaction inhibiting section comprises a transfer section (156) for transferring at least the exposed substrate to the heating section with the resolution reaction of the resist being inhibited.

13. With respect to claim 56, Ikeda also discloses a substrate processing apparatus in Figure 8, comprising: a cassette station (151) including a mounting section on which a substrate cassette housing a plurality of substrate is mounted and a delivery means (153) for receiving and sending the substrate from/to the substrate cassette mounted on the mounting section; and a processing station (multiple part numbers 162, 154), for processing the substrate transferred by the delivery means; and an interface section (multiple part numbers, 155-158 and 163) for delivering the substrate between the processing station and an aligner (159), wherein the processing station comprises: a heating section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for heating the exposed substrate to progress a resolution reaction of a resist; a

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cooling section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for cooling the substrate heated in the heating section to inhibit the progress of the resolution reaction of the resist; and a developing processing section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for performing coating processing of a developing solution for the substrate, and wherein the interface section is cooled (in 163) so as not to cause a dew formation on the substrate to inhibit the resolution reaction of the resist.

14. With respect to claim 57, Ikeda also discloses a substrate processing apparatus in Figure 8, comprising: a cassette station (151) including a mounting section on which a substrate cassette housing a plurality of substrate is mounted and a delivery means (153) for receiving and sending the substrate from/to the substrate cassette mounted on the mounting section; and a processing station (multiple part numbers 162, 154), for processing the substrate transferred by the delivery means; and an interface section (multiple part numbers, 155-158 and 163) for delivering the substrate between the processing station and an aligner (159), wherein the interface section comprises a heating section (155) for heating the exposed substrate to progress a resolution reaction of a resist, wherein the processing station comprises: a cooling section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for cooling the substrate heated in the heating section to inhibit the progress of the resolution reaction of the resist; and a developing processing section (any of 162, which are general/conventional semiconductor resist processing sections; column 13, rows 22-28 and column 14, rows 55-58) for performing coating processing of a developing solution for the substrate, and wherein the interface section is cooled (in 163) so as not to cause a dew formation on the substrate to inhibit the resolution reaction of the resist.

15. With respect to Applicant's intended uses of the claimed apparatus, Examiner notes that the courts have ruled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). Also, a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art

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apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987)

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

18. Claims 40, 54-55 and 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda as applied to claims 35-39, 41, 53, 56-57 and 61 above, and in view of Japanese Patent Publication No. 10-256344 to Tateyama.

19. Ikeda discloses the invention substantially as claimed and as described above.

20. However, Ikeda fails to teach a cooling section cools a transfer area between the exposure section and the heating section by supplying a gas having humidity lower than air to the transfer area.

21. Tateyama teaches using a transfer unit/section comprising a cooling gas flow for the purpose of efficiently cooling substrates down to a first fixed temperature before they are laid on cooling plates to do a second cooling (abstract). With respect to 59, although a specific temperature for controlling the cooling gas is not disclosed in Tateyama, the gas is disclosed as "cooling gas" which would obviously mean that the gas is regulated to a "cooling" temperature.

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22. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the transfer unit/section in Ikeda with a cooling gas flow in order to efficiently cool substrates down to a first fixed temperature before they are laid on cooling plates to do a second cooling as taught by Tateyama.

23. Examiner notes that the combination of Ikeda and Tateyama disclose the structure of the claimed invention that would be capable of the claimed intended use (making the amount of moisture adhering to a substrate smaller), whether or not the exact same intended use is disclosed in the prior art is immaterial, for the courts have ruled that claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959) and that a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987), as noted above.

24. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda as applied to claims 35-39, 41, 53, 56-57 and 61 above, and in view of Japanese Patent Publication No. 10-256344 to Tateyama and U.S. Patent 5,273,585 to Shoga et al.

25. Ikeda discloses the invention substantially as claimed and described above.

26. However, Ikeda fails to teach a gas supply section for supplying a gas the temperature and/or humidity of which is regulated to a face to be processed of a substrate.

27. Tateyama teaches using a transfer unit/section comprising a cooling gas flow for the purpose of efficiently cooling substrates down to a first fixed temperature before they are laid on cooling plates to do a second cooling (abstract). Although a specific temperature for controlling the cooling gas to a specific temperature are not disclosed in Tateyama, the gas is disclosed as "cooling gas" which would obviously mean that the gas is be regulated to a "cooling" temperature.

28. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the transfer unit/section in Ikeda with a cooling gas flow in order to efficiently

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cool substrates down to a first fixed temperature before they are laid on cooling plates to do a second cooling as taught by Tateyama.

29. Ikeda and Tateyama disclose the invention as described above.

30. However, Ikeda and Tateyama fail to teach a temperature regulating section for regulating at least the temperature or the humidity of the gas supplied from the gas supply section.

31. Shoga et al. teach using a regulator section for regulating the temperature of a cooling gas for the purpose of improving a cooling rate of an object to be cooled (column 17, rows 39-43, 63-68 and column 18, rows 22-24).

32. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a regulator section in Ikeda and Tateyama in order to improve the cooling rate of the object being cooled as taught by Shoga et al.

Allowable Subject Matter

33. Claims 42 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

34. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach an apparatus described as described in independent claim 35, wherein the reaction inhibiting section further comprises the ability to control an extent to which the progress of the resolution reaction is inhibited according to an area of the substrate coated with resist and exposed.

Conclusion

35. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. USP Publication discloses an exposure apparatus and an air-conditioning apparatus for use with the exposure apparatus. USP 5,970,717 is a related U.S. Patent for Japanese Patent Publication No. 10-256344 to Tateyama with substantial similar subject matter. USP 5,725,664 teaches providing localized dehumidification of a surrounding space formed by a casing.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571.272.1435. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Karla Moore
Art Unit 1763
22 February 2005